IN THE CLAIMS:

Please amend the claims as set forth below:

1. (Currently Amended) A distributed simulation system comprising:

a first node configured to simulate a first portion of a system under test using a first simulator program; and

a second node configured to simulate a second portion of a system under test using a second simulator program;

wherein the instruction code comprising the first simulator program differs from the instruction code comprising the second simulator program, and wherein the first node and the second node communicate at least signal values during the simulation using message packets formatted according to a grammar, and wherein a simulation of the system under test comprises the first node simulating the first portion of the system under test and the second node simulating the second portion of the system under test;

wherein the distributed simulation system further comprises a hub coupled to the first node and the second node, wherein the hub is configured to route the message packets from the first node to the second node and from the second node to the first node.

2. (Original) The distributed simulation system as recited in claim 1 wherein the first simulator program comprises a first event-based simulator and the second simulator program comprises a second event-based simulator.

3. (Original) The distributed simulation system as recited in claim 2 wherein the first event-based simulator includes a first event scheduler which differs from a second event scheduler included in the second event-based simulator.

4. (Original) The distributed simulation system as recited in claim 2 wherein the first

node further includes a model comprising a representation of logic to perform one or more non-blocking assignments and logic to schedule a call of at least a first code sequence responsive to the non-blocking assignment.

5. (Original) The distributed simulation system as recited in claim 1 wherein the first simulator program comprises an event-based simulator and the second simulator program comprises a cycle-based simulator.

6. (Original) The distributed simulation system as recited in claim 5 wherein the second node is configured to count a number of timesteps equal to a number of timesteps per clock cycle of the clock corresponding to the cycle-based simulator and to cause the cycle-based simulator to evaluate in response thereto.

7-8. (Cancelled)

9. (Currently Amended) The distributed simulation system as recited in claim 1 ~~claim 7~~ wherein the grammar includes a first command defining one or more logical ports and one or more logical signals.

10. (Original) The distributed simulation system as recited in claim 9 wherein the grammar includes a second command defining a mapping between the logical signals and physical signals of a model of each portion of the system under test.

11. (Original) The distributed simulation system as recited in claim 9 wherein the grammar includes a third command defining a routing between the logical ports of the portions of the system under test.

12. (Currently Amended) A method comprising:

simulating a first portion of a system under test using a first simulator program in a first node of a distributed simulation system; ~~and~~

simulating a second portion of a system under test using a second simulator program in a second node of the distributed simulation system;

communicating at least signal values during the simulating using message packets formatted according to a grammar; and

routing the message packets through a hub coupled to the first node and the second node;

wherein the instruction code comprising the first simulator program differs from the instruction code comprising the second simulator program, and wherein the first node and the second node communicate at least signal values during the simulating using a grammar, and wherein a simulation of the system under test comprises the first node simulating the first portion of the system under test and the second node simulating the second portion of the system under test.

13. (Original) The method as recited in claim 12 wherein the first simulator program comprises a first event-based simulator and the second simulator program comprises a second event-based simulator.

14. (Original) The method as recited in claim 13 wherein the first event-based simulator includes a first event scheduler which differs from a second event scheduler included in the second event-based simulator.

15. (Original) The method as recited in claim 13 further comprising performing one or more non-blocking assignments in the first node; and scheduling a call of at least a first code sequence responsive to performing the non-blocking assignment.

16. (Original) The method as recited in claim 12 wherein the first simulator program comprises an event-based simulator and the second simulator program comprises a cycle-

based simulator.

17. (Original) The method as recited in claim 16 further comprising:

counting a number of timesteps equal to a number of timesteps per clock cycle of the clock corresponding to the cycle-based simulator in the second node; and

causing the cycle-based simulator to evaluate in response to counting the number of timesteps.

18-19. (Cancelled)

20. (Currently Amended) The method as recited in claim 12 ~~claim 19~~ wherein the grammar includes a first command defining one or more logical ports and one or more logical signals.

21. (Original) The method as recited in claim 20 wherein the grammar includes a second command defining a mapping between the logical signals and physical signals of a model of each portion of the system under test.

22. (Original) The method as recited in claim 20 wherein the grammar includes a third command defining a routing between the logical ports of the portions of the system under test.

23. (Currently Amended) A ~~carrier~~ computer readable medium storing at least ~~comprising~~:

a first model comprising a representation of logic to perform a non-blocking assignment and logic to schedule a call of at least a first code sequence responsive to the non-blocking assignment, and

the first code sequence comprising instructions executable to sample output signals and drive input signals of a second model.

24. (Currently Amended) The ~~carrier~~ computer readable medium as recited in claim 23 wherein the first code sequence further includes instructions executable to trigger the non-blocking assignment.

25. (Currently Amended) The ~~carrier~~ computer readable medium as recited in claim 24 wherein the first code sequence includes instructions executable to trigger the non-blocking assignment for sampling signals and to trigger the non-blocking assignment again for driving signals.

26. (Currently Amended) The ~~carrier~~ computer readable medium as recited in claim 23 wherein the first model further includes a representation of logic configured to schedule a call of the first code sequence responsive to a sample clock edge.

27. (Currently Amended) The ~~carrier~~ computer readable medium as recited in claim 23 wherein the first model further includes a representation of logic configured to schedule a call of the first code sequence responsive to a timestep transition.

28. (Currently Amended) A ~~carrier~~ computer readable medium storing at least ~~comprising~~ instructions executable to:

count timesteps in a distributed simulation system; and

cause a cycle-based simulator to evaluate a clock cycle in a model responsive to a number of the timesteps equaling a number of timesteps per clock cycle of a clock corresponding to the model.

29. (Currently Amended) The ~~carrier~~ computer readable medium as recited in claim 28

further comprising instructions executable to sample output signals of the model and drive input signals of the model.

30. (New) A distributed simulation system comprising:

a first node configured to simulate a first portion of a system under test using a first simulator program;

a second node configured to simulate a second portion of a system under test using a second simulator program; and

a hub coupled to the first node and the second node, wherein the hub is configured to route message packets from the first node to the second node and from the second node to the first node during simulation, the message packets including message packets that communicate at least signal values,

wherein the instruction code comprising the first simulator program differs from the instruction code comprising the second simulator program, and wherein a simulation of the system under test comprises the first node simulating the first portion of the system under test and the second node simulating the second portion of the system under test.

31. (New) The distributed simulation system as recited in claim 30 wherein the first simulator program comprises a first event-based simulator and the second simulator program comprises a second event-based simulator.

32. (New) The distributed simulation system as recited in claim 31 wherein the first event-based simulator includes a first event scheduler which differs from a second event scheduler included in the second event-based simulator.

33. (New) The distributed simulation system as recited in claim 31 wherein the first node further includes a model comprising a representation of logic to perform one or more

non-blocking assignments and logic to schedule a call of at least a first code sequence responsive to the non-blocking assignment.

34. (New) The distributed simulation system as recited in claim 30 wherein the first simulator program comprises an event-based simulator and the second simulator program comprises a cycle-based simulator.

35. (New) The distributed simulation system as recited in claim 34 wherein the second node is configured to count a number of timesteps equal to a number of timesteps per clock cycle of the clock corresponding to the cycle-based simulator and to cause the cycle-based simulator to evaluate in response thereto.